



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,102	11/26/2003	Ralf Kruger	016790-0485	6204
22428	7590	03/09/2005	EXAMINER	
FOLEY AND LARDNER SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			AMARI, ALESSANDRO V	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/721,102	Applicant(s) KRUGER ET AL. CJ	
	Examiner Alessandro V. Amari	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/26/03 & 4/20/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Objections

1. Claims 1-22 are objected to because of the following informalities:

Regarding claim 1, line 8, the phrase "exactly one condenser lens system" is inconsistent with the transitional phrase "comprising" (see line 1). The transitional term "comprising" is open-ended and does not exclude additional unrecited elements. See MPEP 2111.03. Claims 2-19 inherit the same issue.

Regarding claim 20, line 8, the phrase "exactly one condenser lens system" is inconsistent with the transitional phrase "comprising" (see line 1). The transitional term "comprising" is open-ended and does not exclude additional unrecited elements. See MPEP 2111.03. Claims 21 and 22 inherit the same issue.

Regarding claims 18 and 21, line 2, the phrase "comprises exactly one lens" is inconsistent with the transitional phrase "comprising" (see line 1). The transitional term "comprising" is open-ended and does not exclude additional unrecited elements. See MPEP 2111.03.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 5, 6, 10, 11 and 18-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Taira US 4,253,726.

In regard to claims 1, 20, 23 and 24, Taira teaches (see for example, Figures 2-6) a microscope having a transmitted-light illumination device, comprising a light source (11) configured to generate an illuminating light beam incident onto an object plane of an object to be imaged with the microscope, said illuminating light beam defining an optical axis; a collector lens (12); a field diaphragm (13); an aperture diaphragm (14, 17); a condenser lens system (15), said condenser lens system configured to be switchable into and out of the illuminating light beam as shown in Figures 2-6; and a focusing lens (18) positioned between said field diaphragm and said aperture diaphragm, said focusing lens configured to be displaceable along the optical axis as shown in Figures 2-6, wherein the illumination device is configured so that: a) an illumination of said object plane corresponding to an objective magnification range of approximately 10X to 100X is provided when said condenser lens system is switched into the illuminating beam path; and b) an illumination of said object plane corresponding to an objective magnification range of approximately 1X to 5X is provided when said condenser lens system is switched out of the illuminating beam path, and wherein said aperture diaphragm and said field diaphragm exchange their optical functions when said condenser lens system is switched out of the illuminating beam path as described in column 1, lines 65-68, column 2, lines 1-32, 56-68, column 3, lines 1-68 and column 4, lines 1-38. Although the prior art does not specifically teach that the aperture diaphragm and said field diaphragm exchange their optical functions when said

condenser lens system is switched out of the illuminating beam path, this feature is seen to be an inherent teaching of the device since the device provides for illumination for different magnification levels and it is apparent that the aperture and field diaphragms must exchange their optical functions in order for the device to function as intended.

Regarding claim 5, Taira teaches that said condenser lens system is configured to be mechanically switchable into and out of the illuminating light beam as described in column 4, lines 29-36.

Regarding claim 6, Taira teaches that the illumination device is configured so that: a) an illumination of said object plane corresponding to an objective magnification range of approximately 10X to 100X is provided when said condenser lens system is switched into the illuminating beam path; and b) an illumination of said object plane corresponding to an objective magnification range of approximately 1X to 5X is provided when said condenser lens system is switched out of the illuminating beam path as described in column 1, lines 65-68 and column 2, lines 1-32.

Regarding claim 10, Taira teaches that said aperture diaphragm and said field diaphragm exchange their optical functions when said condenser lens system is switched out of the illuminating beam path as described in column 2, lines 56-68, column 3, lines 1-68 and column 4, lines 1-38. Although the prior art does not specifically teach that the aperture diaphragm and said field diaphragm exchange their optical functions when said condenser lens system is switched out of the illuminating beam path, this feature is seen to be an inherent teaching of the device since the device

provides for illumination for different magnification levels and it is apparent that the aperture and field diaphragms must exchange their optical functions in order for the device to function as intended.

Regarding claims 11 and 25, Taira teaches that said condenser lens system is switched out of the illuminating beam path, said focusing lens is displaced such that said field diaphragm is focused into the object plane as shown in Figures 2-6 and as described in column 2, lines 56-68, column 3, lines 1-68 and column 4, lines 1-38.

Regarding claims 18 and 21, Taira teaches that said condenser lens system comprises exactly one lens as shown in Figures 5A and 5B.

Regarding claims 19 and 22, Taira teaches that said condenser lens system comprises a plurality of lenses as shown in Figure 6.

4. Claims 1, 5, 18, 20 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi et al US 3,679,287.

In regard to claims 1 and 20, Takahashi et al teaches (see Figure 1) a transmitted-light illumination device for a microscope, comprising a light source (9) configured to generate an illuminating light beam incident onto an object plane of an object to be imaged with the microscope, said illuminating light beam defining an optical axis; a collector lens (10); a field diaphragm (12); an aperture diaphragm (7); exactly one condenser lens system (6), said condenser lens system configured to be switchable into and out of the illuminating light beam as shown in Figure 1; and a focusing lens (14) positioned between said field diaphragm and said aperture diaphragm, said focusing

lens configured to be displaceable along the optical axis as described in column 2, lines 21-75 and column 3, lines 1-42.

Regarding claim 5, Takahashi et al teaches that said condenser lens system is configured to be mechanically switchable into and out of the illuminating light beam as described in column 2, lines 21-57.

Regarding claims 18 and 21, Takahashi et al teaches that said condenser lens comprises exactly one lens as shown in Figure 1.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 7, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taira US 4,253,726 in view of Stankewitz et al US 5,684,625.

Regarding claims 2, 7, 12 and 13, Taira teaches the invention as set forth above but does not teach regarding claim 2, an electrical control apparatus configured to switch the condenser lens system into and out of the illuminating light beam.

Regarding claim 2, Stankewitz et al does teach (see Figures 1, 2) an electrical control apparatus (14) configured to switch the condenser lens system (8) into and out of the illuminating light beam as described in column 3, lines 47-67 and column 4, lines 1-31.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the control apparatus of Stankewitz et al in the microscope illumination device of Taira in order to provide for rapid automatic switching of the condenser for exact illumination.

Regarding claim 7, Taira teaches that the illumination device is configured so that: a) an illumination of said object plane corresponding to an objective magnification range of approximately 10X to 100X is provided when said condenser lens system is switched into the illuminating beam path; and b) an illumination of said object plane corresponding to an objective magnification range of approximately 1X to 5X is provided when said condenser lens system is switched out of the illuminating beam path as described in column 1, lines 65-68 and column 2, lines 1-32.

Regarding claim 12, Taira teaches that said aperture diaphragm and said field diaphragm exchange their optical functions when said condenser lens system is switched out of the illuminating beam path as described in column 2, lines 56-68, column 3, lines 1-68 and column 4, lines 1-38. Although the prior art does not specifically teach that the aperture diaphragm and said field diaphragm exchange their optical functions when said condenser lens system is switched out of the illuminating beam path, this feature is seen to be an inherent teaching of the device since the device provides for illumination for different magnification levels and it is apparent that the aperture and field diaphragms must exchange their optical functions in order for the device to function as intended.

Regarding claim 13, Taira teaches that said condenser lens system is switched out of the illuminating beam path, said focusing lens is displaced such that said field diaphragm is focused into the object plane as shown in Figures 2-6 and as described in column 2, lines 56-68, column 3, lines 1-68 and column 4, lines 1-38.

7. Claims 3, 8, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taira US 4,253,726 in view of Tigliev et al US 5,896,223.

Regarding claims 3, 8, 14 and 15, Taira teaches the invention as set forth above but does not teach regarding claim 3, a spindle motor configured to controllably displace said focusing lens along the optical axis.

Regarding claim 3, Tigliev et al does teach (see Figures 1, 2, 4) a spindle motor (36) configured to controllably displace said focusing lens along the optical axis as shown in Figures 1 and 2.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the motor of Tigliev et al in the microscope illumination device of Taira in order to provide for rapid and sequential presentation to the observer of in-focus images as described in column 1, lines 57-62 of Tigliev et al.

Regarding claim 8, Taira teaches that the illumination device is configured so that: a) an illumination of said object plane corresponding to an objective magnification range of approximately 10X to 100X is provided when said condenser lens system is switched into the illuminating beam path; and b) an illumination of said object plane corresponding to an objective magnification range of approximately 1X to 5X is provided

when said condenser lens system is switched out of the illuminating beam path as described in column 1, lines 65-68 and column 2, lines 1-32.

Regarding claim 14, Taira teaches that said aperture diaphragm and said field diaphragm exchange their optical functions when said condenser lens system is switched out of the illuminating beam path as described in column 2, lines 56-68, column 3, lines 1-68 and column 4, lines 1-38. Although the prior art does not specifically teach that the aperture diaphragm and said field diaphragm exchange their optical functions when said condenser lens system is switched out of the illuminating beam path, this feature is seen to be an inherent teaching of the device since the device provides for illumination for different magnification levels and it is apparent that the aperture and field diaphragms must exchange their optical functions in order for the device to function as intended.

Regarding claim 15, Taira teaches that said condenser lens system is switched out of the illuminating beam path, said focusing lens is displaced such that said field diaphragm is focused into the object plane as shown in Figures 2-6 and as described in column 2, lines 56-68, column 3, lines 1-68 and column 4, lines 1-38.

8. Claims 4, 9, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taira US 4,253,726 in view of Stankewitz et al US 5,684,625 and further in view of Tigliev et al US 5,896,223.

Regarding claims 4, 9, 16 and 17, Taira in view of Stankewitz et al teaches the invention as set forth above but regarding claim 4 does not teach a spindle motor configured to controllably displace said focusing lens along the optical axis.

Regarding claim 4, Tigliev et al does teach (see Figures 1, 2, 4) a spindle motor (36) configured to controllably displace said focusing lens along the optical axis as shown in Figures 1 and 2.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the motor of Tigliev et al in the microscope illumination device of Taira in view of Stankewitz et al in order to provide for rapid and sequential presentation to the observer of in-focus images as described in column 1, lines 57-62 of Tigliev et al.

Regarding claim 16, Taira teaches that said aperture diaphragm and said field diaphragm exchange their optical functions when said condenser lens system is switched out of the illuminating beam path as described in column 2, lines 56-68, column 3, lines 1-68 and column 4, lines 1-38. Although the prior art does not specifically teach that the aperture diaphragm and said field diaphragm exchange their optical functions when said condenser lens system is switched out of the illuminating beam path, this feature is seen to be an inherent teaching of the device since the device provides for illumination for different magnification levels and it is apparent that the aperture and field diaphragms must exchange their optical functions in order for the device to function as intended.

Regarding claim 17, Taira teaches that said condenser lens system is switched out of the illuminating beam path, said focusing lens is displaced such that said field diaphragm is focused into the object plane as shown in Figures 2-6

and as described in column 2, lines 56-68, column 3, lines 1-68 and column 4, lines 1-38.

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al US 3,679,287 in view of Stankewitz et al US 5,684,625.

Regarding claim 2, Takahashi et al teaches the invention as set forth above but does not teach regarding claim 2, an electrical control apparatus configured to switch the condenser lens system into and out of the illuminating light beam.

Regarding claim 2, Stankewitz et al does teach (see Figures 1, 2) an electrical control apparatus (14) configured to switch the condenser lens system (8) into and out of the illuminating light beam as described in column 3, lines 47-67 and column 4, lines 1-31.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the control apparatus of Stankewitz et al in the microscope illumination device of Takahashi et al in order to provide for rapid automatic switching of the condenser for exact illumination.

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al US 3,679,287 in view of Tigliev et al US 5,896,223.

Regarding claim 3, Takahashi et al teaches the invention as set forth above but does not teach regarding claim 3, a spindle motor configured to controllably displace said focusing lens along the optical axis.

Regarding claim 3, Tigliev et al does teach (see Figures 1, 2, 4) a spindle motor (36) configured to controllably displace said focusing lens along the optical axis as shown in Figures 1 and 2.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the motor of Tigliev et al in the microscope illumination device of Takahashi et al in order to provide for rapid and sequential presentation to the observer of in-focus images as described in column 1, lines 57-62 of Tigliev et al.

11. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al US 3,679,287 in view of Stankewitz et al US 5,684,625 and further in view of Tigliev et al US 5,896,223.

Regarding claim 4, Takahashi et al in view of Stankewitz et al teaches the invention as set forth above but regarding claim 4 does not teach a spindle motor configured to controllably displace said focusing lens along the optical axis.

Regarding claim 4, Tigliev et al does teach (see Figures 1, 2, 4) a spindle motor (36) configured to controllably displace said focusing lens along the optical axis as shown in Figures 1 and 2.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the motor of Tigliev et al in the microscope illumination device of Takahashi et al in view of Stankewitz et al in order to provide for rapid and sequential presentation to the observer of in-focus images as described in column 1, lines 57-62 of Tigliev et al.

12. Claims 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al US 3,679,287.

Regarding claims 19 and 22, Takahashi et al teaches the invention as set forth above but does not teach that said condenser lens system comprises a plurality of lenses. It is well known in the microscope art to use condenser lens systems comprising a plurality of lenses. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a condenser lens systems comprising a plurality of lenses to provide for sharper resolution and for correction of aberrations.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kawasaki et al US 6,212,005 and Taira US 4,397,529 teach transmitted light illumination systems for microscopes.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alessandro V. Amari whose telephone number is (571) 272-2306. The examiner can normally be reached on Monday-Friday 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ava
03 March 2005


MARK A. ROBINSON
PRIMARY EXAMINER